AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1.   (Previously presented) A through hole examination method comprising:

irradiating light from one side of a work piece having a through hole; and

detecting passing light by imaging the passing light from another side of the work piece by a sensor camera having a plurality of imaging elements,

wherein the examination is conducted by imaging with an imaging focal point of the sensor camera being shifted away from a surface of the work piece at a distance greater than a focal length of the sensor camera.

2.   (Previously presented) A through hole examination method comprising:

irradiating light from one side of a work piece having a plurality of through holes;

imaging and detecting passing light from another side of the work piece by a sensor camera having a plurality of imaging elements,

wherein the imaging is conducted with a focal point of the sensor camera being shifted away from a surface of the work piece at a distance greater than a focal length of the sensor camera to obtain images corresponding to the through holes, and areas of the images of the through holes are compared with one another.

3.   (Previously presented) A through hole examination method according to claim 1, wherein a line sensor camera is used as the sensor camera, and the imaging is conducted by shifting the camera relative to and in parallel with the work piece.

4.   (Previously presented) A through hole examination method according to claim 1, wherein the imaging focal point of the sensor camera is shifted away from the surface of the work piece at the distance greater than the focal length of the sensor camera to conduct imaging such that an area of an image of the passing light is expanded.

5.   (Previously presented) A through hole examination apparatus comprising:

a light source;

a sensor camera having a plurality of imaging elements;

a table on which a work piece having through holes is mounted interposed between the light source and the sensor camera, wherein

the sensor camera is capable of imaging light passing through the through holes, and

a relative position between the sensor camera and the surface of the work piece is set such that an imaging focal point of the sensor camera is shifted away from a surface of the work piece at a distance greater than a focal length of the sensor camera; and

an image processing device receives imaging signals provided by the sensor camera and performs a process for comparing imaged areas.

6.   (Previously presented)   A method for examining through holes, the method characterized in that imaging is conducted with an imaging focal point of one of a line sensor camera and an area sensor camera being shifted away from a surface of a work piece at a distance greater than a focal length of the sensor camera or the area sensor.

7.   (Previously presented)   A through hole examination method according to claim 2, wherein a line sensor camera is used as the sensor camera, and the imaging is conducted by shifting the camera relative to and in parallel with the work piece.

8.   (Previously presented)   A through hole examination method according to claim 2, wherein the imaging focal point of the sensor camera is shifted away from the surface of the work piece at the distance greater than the focal length of the sensor camera to conduct imaging such that an area of an image of the passing light is expanded.

9.   (New)   The through hole examination method according to claim 1, wherein the examination is conducted in an out-of-focus condition.

10.   (New)   The through hole examination method according to claim 2, wherein the imaging is conducted in an out-of-focus condition.

11. (New)   The method for examining through holes according to claim 6, wherein the imaging is conducted in an out-of-focus condition.

12. (New)   The through examination apparatus according to claim 5, wherein the apparatus conducts imaging in an out-of-focus condition.